



# Puget Sound Clean Air Agency ✓

110 Union Street, Suite 500  
Seattle, WA 98101-2038  
phone 206-343-8800/1-800-552-3565  
fax 206-343-7522 www.pscleanair.org

## Compliance Status Report

Case No.

Registration No. 11339

Evaluation Date: 1/21/03 Time:

Name <b>Ash Grove Cement Co.</b>		Responsible Person, Title <b>Graig Gotro, Plant Manager</b>	
Location (Address) <b>3801 E. Marginal Way So.</b>	City <b>Seattle, WA</b>	Zip <b>98134</b>	County <b>King</b>
Mailing Address <b>As Above</b>	City, State <b>Seattle, WA</b>	Zip <b>98134</b>	Phone <b>(206) 623-5596</b>

☒ I observed no violations of our Agency's regulations or the Cement Neshaps requirement for a dioxin source test on the main exhaust stack and the coal mill stack. On January 21<sup>st</sup> 2003 this Agency reviewed of your dioxin source test results for the test that was conducted on October 22<sup>nd</sup> through October 24<sup>th</sup> 2002. We observed that Ash Grove met the 0.20 ng/dscm corrected to 7% oxygen limit for average run temperatures greater than 400 degrees F and the 0.40 ng/dscm corrected to 7% oxygen limit for average run temperatures less than or equal to 400 degrees F.

☐ I could not make a compliance determination because:

☐ I need to consult with others. I will share my conclusions with you either in person, over the phone, or in writing by

☐ I need more information. Please submit the following information by :

Issued by: Elizabeth Gilpin, Inspector, 206-689-4026

Date/Time: 2/3/03

Received by

signature

print name

Signing this document is not an admission of guilt



Working Together For Clean Air

[www.pscleanair.org](http://www.pscleanair.org)

Ph 206.343.8800

1.800.552.3565

Fax 206.343.7522

110 Union Street

Suite 500

Seattle, WA 98101-2038

February 3, 2003

Ash Grove Cement Company  
c/o Craig Gotro  
3801 E Marginal Way South  
Seattle WA 98134

Re: Ash Grove Cement Company (R11339)  
Disposition of Written Warning Nos. 2-006631 and 2-006632

**EXECUTIVE DIRECTOR**

Dennis J. McLerran

Dear Mr. Gotro:

**BOARD OF DIRECTORS**

**CHAIR**

Bill Evans

Tacoma City Councilman

**KING COUNTY**

Ron Sims, Executive

**SEATTLE**

Gregory J. Nickels, Mayor

**KITSAP COUNTY**

Jan Angel, Commissioner

**BREMERTON**

Cary Bozeman, Mayor

**PIERCE COUNTY**

John Ladenburg, Executive

**TACOMA**

Bill Baarsma, Mayor

**SNOHOMISH COUNTY**

Jeff Sax, Councilman

**EVERETT**

Edward D. Hansen, Mayor

**MEMBER AT LARGE**

Janet Chalupnik

Based on the submittal of your passing Dioxin Source Test for the reporting period of October 22 through October 24, 2002, this Agency considers the above-referenced matter closed as of this date and will take no further enforcement action in this case.

Thank you for your action to ensure compliance with Agency regulations and for joining with this Agency in efforts to achieve cleaner air.

Sincerely,

Elizabeth Gilpin  
Inspector

EMG/ml

cc: Mario Miller, Supervising Inspector  
Fred Austin, Engineer  
Melissa McAfee, Inspector



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Puget Sound Clean Air Agency

# Compliance Status Report

Inspection Date: September 3<sup>rd</sup> 03

Time: 12:00 pm

Case/Registration No. <u>Reg. 11339</u>	Name <u>Ash Grove Cement Co.</u>	Responsible Person, Title <u>Craig Puljan Mgr.</u>		
Site Address <u>3801 E. Marginal Way So.</u>	City <u>Seattle</u>	Zip <u>98134</u>	County <u>King</u>	
Mailing Address <u>As Above</u>	City, State <u>Seattle, WA</u>	Zip <u>98134</u>	Phone <u>(206) 623-5596</u>	

- ☐ I observed no violations of our agency's regulations during my inspection in the areas I inspected.
- ☐ I could not make a compliance determination because:
- ☐ I need to consult with others. I will share my conclusions with you either in person, over the phone, or in writing by \_\_\_\_\_.
- ☒ I need more information. Please submit the following information by within 10 days.

① During our compliance inspection of your facility on 9/3/03, we observed visible emissions from the kiln cowling and the feed end of the kiln during phase I of start up (prior to the introduction of feed) We were unable to position ourselves

Issued By:

[Signature]

Received By:

[Signature]

Date/Time:

9/3/03

2:45 pm

## Puget Sound Clean Air Agency

Source Name: Ash Grove Cement Co Case No./Registration No.: 11339 CSR 9/3/03

Correctly and as a result, we were unable to take method 9A readings.

Please collect method 9A readings for at least 20 minutes in any one hour from the kiln cowl and feed end of the kiln during your next phase I kiln start up to determine compliance with Regulation I 9.03(a).

② The Agency has received complaints and inquiries about mercury and Arsenic emissions from your facility. Please submit to the Agency your Annual Arsenic and Mercury emissions to the atmosphere from your facility in 2002. please include the calculations, methods, and assumptions you used in obtaining these values.

Issued By:

*Elizabeth J. [Signature]*

Received By: *GAB [Signature]*

Date/Time:

9/3/03

2:45 pm

Violation No.:

CSR dated 9/3/03

# ASH GROVE CEMENT COMPANY



"WESTERN REGION"

September 8, 2003

Ms. Elizabeth Gilpin  
Puget Sound Air Pollution Control Agency  
110 Union Street, Suite 500  
Seattle, WA. 98101-2038

Re: Compliance Status Report – September 3, 2003 Compliance Inspection

Dear Ms. Gilpin:

The above Compliance Status Report requested additional information:

## MERCURY

The 2003 annual Hg concentrations, presented below, are based on results of recent raw mix and coal sampling for Hg at the Seattle plant. Since the results were  $<0.01$  ppm for raw mix,  $\frac{1}{2}$  the detection limit was used (0.005 ppm). The Hg concentration data for tires was based on a recent in-house study of mercury concentrations in tires at one of our other facilities. The concentration for tires was calculated as an average from 25 data sets. The annual estimate adds a degree of conservatism by assuming 0% Hg partitions to the clinker.

Mercury	ppm		2002 tons used				2002 Hg input (lbs)
Raw feed	0.005	x	982876	/	1000000*2000	=	9.8
Coal	0.19	x	85677	/	1000000*2000	=	32.6
Tires	0.13	x	5499	/	1000000*2000	=	1.4
					Annual		43.8

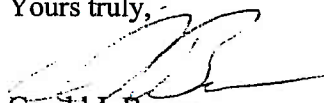
## ARSENIC

Based on results of a stack test conducted by Valid Results on August 6, 1996, the emission estimate for Arsenic has been calculated as  $2.32 \times 10^{-6}$  lbs. As per ton of clinker produced. This translates to 1.61 lbs. As emitted in 2002.

Arsenic Emission factor	Clinker Produced	Emission
$2.32 \times 10^{-6}$ lbs. As per ton of clinker	693,842 tons	1.61 lbs.

If Ash Grove can provide any further information, please contact me.

Yours truly,

  
Gerald J. Brown  
Manager Safety and Environment

cc: Craig Puljan, Plant Manager

# ASH GROVE CEMENT COMPANY



February 18, 2004

Ms. Elizabeth Gilpin  
Puget Sound Air Pollution Control Agency  
110 Union Street, Suite 500  
Seattle, WA. 98101-2038

Re: Compliance Status Report – September 3, 2003 Compliance Inspection

Dear Ms. Gilpin:

The above Compliance Status Report requested Method Nine readings for at least 20 minutes in any one hour from the kiln cowling and feed end of the next phase one kiln start up to determine compliance with Regulation I 9.03(a).

Attached you will find two method nine readings taken 9/11/03 and 9/30/03 taken by certified observers. Quality of the readings were affected by weather conditions, swirling winds and poor background.

Yours truly,

A handwritten signature in black ink, appearing to read "G. J. Brown".

Gerald J. Brown  
Manager Safety and Environmental

CC: Puljan



## VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: <b>ASH Grove Cement</b>		DATE: <b>9-11-03</b>		START TIME: <b>12:46</b>		END TIME: <b>12:53</b>											
ADDRESS: <b>3801 E. Marginal Way S.</b>		Sec min		0		15		30		45		COMMENTS					
ADDRESS: <b>Seattle</b>																	
COUNTY: <b>King</b>	STATE: <b>WA</b>	ZIP: <b>98134</b>		1		20		25		20		20					
PROCESS EQUIPMENT: <b>Cement Kiln</b>		OPERATING MODE: <b>100% CAPACITY</b>		2		20		25		25		20					
CONTROL EQUIPMENT: <b>Reverse Air</b>		OPERATING MODE: <b>75% CAPACITY</b>		3		20		20		20		20					
DESCRIBE EMISSION POINT: <b>Top of the Kiln Head</b>				4		20		15		20		20					
SOURCE HEIGHT: <b>60-70 feet</b>				5		20		20		20		20					
HEIGHT RELATIVE TO OBSERVER: <b>60-70 ft</b>				6		20		15		20		25					
DISTANCE FROM OBSERVER: <b>150 ft</b>				7													
DIRECTION FROM OBSERVER: <b>East</b>				8													
VIEWING ANGLE TO PLUME: <b>20 Degrees</b>				9													
DESCRIBE EMISSIONS: START <del>Grey</del> END <del>Grey</del>				10													
EMISSION COLOR: START <b>Grey</b> END <b>Grey</b>				11													
IF WATER DROPLET PLUME: ATTACHED? DETACHED? <b>X</b>				12													
PLUME BACKGROUND: START END				13													
BACKGROUND COLOR: START <b>Grey</b> END <b>Grey</b>				14													
SKY CONDITIONS: START <b>Overcast</b> END <b>Overcast</b>				15													
WIND SPEED: START END				16													
WIND DIRECTION: START END				17													
TEMPERATURE: START END				18													
RELATIVE HUMIDITY: START END				19													
<div style="display: flex; justify-content: space-between;"> <div> <p>DRAW NORTH ARROW</p> </div> <div> <p>WIND: </p> <p>PLUME: </p> <p>SUN: </p> </div> </div> <div style="text-align: center; margin-top: 20px;"> </div>				20													
				21													
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30																	

OBSERVERS NAME: **Matt Straden**

OBSERVERS SIGNATURE: *[Signature]* DATE: **9-16-03**

ORGANIZATION: **ASH Grove Cement**

CERTIFIED BY: **Valhalla Regional Clean Air Authority** DATE: **9-4-03**

CERTIFICATION NUMBER: **WA-502-18**

AGCS2M000744

COMPANY NAME: ASHGROVE CEMENT				DATE: 9-30-03		START TIME: 0801 PDT		END TIME: 0826 PDT	
ADDRESS: 3801 EAST MARGINAL WAY SOUTH				Sec min		0		15 30 45	
ADDRESS:								COMMENTS	
CITY: SEATTLE		STATE: WA		ZIP: 98134					
PROCESS EQUIPMENT: ROTARY KILN		OPERATING MODE: PRE-HEAT							
CONTROL EQUIPMENT: ID FAN		OPERATING MODE: OPERATING AT 10 %							
DESCRIBE EMISSION POINT: TOP OF KILN DISCHARGE HOOD - ABOVE COOLER TUBES				1		20		20 25 30	
SOURCE HEIGHT: 50				2		20		15 25 20	
HEIGHT RELATIVE TO OBSERVER: 70' BELOW				3		20		20 20	
DISTANCE FROM OBSERVER:				4				20 35	
DIRECTION FROM OBSERVER: EAST				5		30		20 20 20	
VIEWING ANGLE TO PLUME:				6		20		15 25 20	
DESCRIBE EMISSIONS: START LIGHT BLUE SMOKE END SAME				7		25		30 20	
EMISSION COLOR: START: L BLUE END: SAME		IF WATER DROPLET PLUME: ATTACHED? <input type="checkbox"/> DETACHED? <input type="checkbox"/>		8					
PLUME BACKGROUND: START KILN END SAME				9					
BACKGROUND COLOR: START DARK BROWN END SAME		SKY CONDITIONS: START OVERCAST END SAME		10		20		20 25 20	
WIND SPEED: START 1-2 MPH END 1-2 MPH		WIND DIRECTION: START WEST END WEST		11		30		20 20 20	
TEMPERATURE: START 58° END SAME		RELATIVE HUMIDITY: START 80% END 80%		12		15		20 20	
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>DRAW NORTH ARROW</p> </div> <div> <p>WIND: →</p> <p>PLUME: ○</p> <p>SUN: ⊙</p> </div> </div>				13		25		20 20	
				14		20		25 20 20	
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OBSERVERS NAME: JAMES SCHAEFFER	
OBSERVERS SIGNATURE: <i>James Schaeffer</i>	DATE: 9-30-03
ORGANIZATION: ASHGROVE CEMENT	
CERTIFIED BY: YAKIMA REGIONAL CLEAN AIR AUTHORITY	DATE: 9-02-03
CERTIFICATION NUMBER: WA-FOO-41	

ADDITIONAL INFORMATION:  
KILN PRE-HEAT - ID FAN RUNNING AT 10 %

CONTINUOUS TURNS AT 0730 PDT.

VIEW WAS FROM TOP OF GROUP 1 SILO'S





Working Together For Clean Air

[www.pscleanair.org](http://www.pscleanair.org)

Ph 206.343.8800

1.800.552.3565

Fax 206.343.7522

110 Union Street

Suite 500

Seattle, WA 98101-2038

September 24, 2003

Ash Grove Cement Company  
c/o Craig Puljan, Plant Manager  
3801 E Marginal Wy S  
Seattle, WA 98134

Re: Ash Grove Cement Company (R11339)  
Disposition of the July 24, 2003 Compliance Status Report (CSR)

**EXECUTIVE DIRECTOR**

Dennis J. McLerran

**BOARD OF DIRECTORS**

**TACOMA CITY COUNCIL, CHAIR**

Bill Evans

**KING COUNTY**

Ron Sims, Executive

**SEATTLE**

Gregory J. Nickels, Mayor

**KITSAP COUNTY**

Jan Angel, Commissioner

**BREMERTON**

Cary Bozeman, Mayor

**PIERCE COUNTY**

John Ladenburg, Executive

**SNOHOMISH COUNTY**

Jeff Sax, Councilman

**EVERETT**

Frank Anderson, Mayor

**MEMBER AT LARGE**

Janet Chalupnik

Dear Mr. Puljan:

Based on the information provided in your Corrective Action letter dated August 19, 2003, this Agency considers the CSR --which resulted from our July 24, 2003 on-site inspection of your facility-- closed as of this date and will take no further enforcement action in this case.

Thank you for your action to ensure compliance with Agency regulations and for joining with this Agency in efforts to achieve cleaner air.

Sincerely,

Elizabeth Gilpin  
Inspector

EMG/ml

cc: Mario Miller, Supervising Inspector



# Puget Sound Clean Air Agency

110 Union Street, Suite 500

Seattle, WA 98101-2038

phone 206-343-8800/1-800-552-3565

fax 206-343-7522 www.pscleanair.org

## Compliance Status Report

Case No.

✓ Registration No. 11339

Evaluation Date: 7/24/03 Time:

Name <b>Ash Grove Cement Company</b>		Responsible Person, Title <b>Craig Puljan, Plant Manager</b>	
Location (Address) <b>3801 E. Marginal Way So.</b>	City <b>Seattle, WA</b>	Zip <b>98134</b>	County <b>King</b>
Mailing Address <b>As Above</b>	City, State <b>Seattle, WA</b>	Zip <b>98134</b>	Phone <b>(206) 623-5596</b>

- ☐ I observed no violations of our Agency's regulations during my \_\_\_\_\_ review of your \_\_\_\_\_ continuous emission monitoring report dated \_\_\_\_\_ and received by this Agency on \_\_\_\_\_.
- ☐ I could not make a compliance determination because:
- ☐ I need to consult with others. I will share my conclusions with you either in person, over the phone, or in writing by \_\_\_\_\_.
- ☒ I need more information. Please submit the following information within 10 days of your receipt of this notice:

1. During our compliance inspection of your facility on July 24, 2003 you provided us with the following main baghouse inlet temperature limits established during your 10/22-10/24/02 source test: Raw Mill On: 335.84 degrees F: Raw Mill Off: 437.9 degrees F. The actual source test report dated 11/22/02 table 2-2 for the 10/22/02-10/24/02 test shows the following temperature limits: Raw mill on: 334.0 degrees F. Raw mill off: 492.0 degrees F. Please provide an explanation of the apparent discrepancies in the established main baghouse inlet temperature values.

2. Please provide a concise explanation explaining why the G-Cooler baghouse exhaust is not subject to the NSPS requirements to install a continuous opacity monitor or conduct daily method 9 opacity readings to demonstrate compliance with the 10% clinker cooler exhaust emission limit.

3. Coal Mill dioxin concentrations

We observed the dioxin emissions from the coal mill in the 11/22/02 source test results table 2-2 reported as  $9.79 \times 10^{-15}$  ng/dscm. However, the letter to the Agency dated 6/10/2003

# ASH GROVE CEMENT COMPANY



"WESTERN REGION"

August 19, 2003

Ms. Elizabeth Gilpin  
Puget Sound Air Pollution Control Agency  
110 Union Street, Suite 500  
Seattle, WA. 98101-2038

Re: Compliance Status Report – July 2003 Compliance Inspection

Dear Ms. Gilpin:

The above report request additional information:

**1. Main Baghouse inlet temperatures.**

The discrepancy between the temperature stated and that actual established in the source test is due to an error made in converting degrees F to degrees C. The correct temperature limits are:

Raw Mill On: 334 degrees F/ 167.77 degrees C  
Raw Mill Off: 492 degrees F/ 255.55 degrees C

**2. The G-Cooler is not subject to NSPS requirements to install a continuous opacity monitor or conduct daily Method 9 opacity readings.**

40 CFR Part 60 defines a Clinker Cooler as "equipment into which clinker product leaving the kiln is place to be cooled by air supplied by a forced draft or a natural draft supply system." There are essentially two different types of cement clinker coolers in operation in the U.S. These being the Reciprocating Grate Cooler and the Planetary Cooler. While there are variations in the types of reciprocating grate coolers, they are all based on the same basic design. In the reciprocating grate cooler, lower clinker discharge temperatures are achieved by passing an additional quantity of air through the clinker. Because this additional air cannot be utilized in the kiln for efficient combustion, it is vented to the atmosphere, used for drying coal or raw materials, or used as a combustion air source for the precalciner.

By contrast the planetary cooler, which is the type at the Ash Grove Seattle plant, does not use any additional air for cooling. All the cooling air is drafted through the cooler tubes and is used completely in the pyro-processing through the kiln. No excess cooling air is vented from the system. 100% of the cooling air is drafted through the kiln system. A COM monitors kiln stack exhaust.

The Peters G-Cooler provides added cooling to prepare the clinker for transportation on a rubberized belt and for storage. The G-Cooler uses an indirect heat exchange system to cool the clinker, the cooling air does not contact the clinker and there is no clinker cooler exhaust gas to control. The dust collector on the secondary cooler or G-Cooler is simply for the purpose of maintaining a negative draft condition of the equipment hence minimizing any fugitive dust created through the transport of clinker through the system. It is similar in function to any of the other dust collectors such as material transfer points, finish mills, etc. Emissions generated from the affected sources associated with conveying and conveyor transfer points are regulated under 40 CFR Part 60, Subpart F and do not require opacity monitors.

**3. The dioxin emissions in table 2-2 of the 11/22/02 source test is different than in the 6/10/2003 letter.**

The lbs./hr shown for Coal Mill #1 in the June 10, 2003 table is incorrect. This difference is due to a typo error made in the 6/10 response to a question posed to Bob Vantuyl by Fred Austin. The attached table should be replaced in the June 10 letter and reflects the correct TEQ emission rate. The correct table was sent to Fred Austin via E-mail on June 17, 2003.

**4. Planetary cooler tube water sprays were not installed as a fugitive dust control device.**

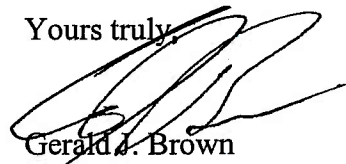
The water spray system was installed in order to maintain uniform steel temperatures of the cooler tubes. Although it was not intended for fugitive dust control but it does provide added benefit in this area.

**5. Thermocouple temperature range**

The response range of the Main Baghouse inlet thermocouple complies with requirements specified in 40 CFR 63.1350 (f)(1)(i) for Raw Mill on and off operating conditions. The thermocouple is calibrated at temperatures ranging from 0°F to 1000°F. This is shown in the Temperature CMS Validation section of the attached Thermocouple Quarterly Performance Audit Report.

If Ash Grove can provide any further information, please contact me.

Yours truly,



Gerald J. Brown  
Manager Safety and Environment

cc: Craig Puljan

**VALID RESULTS, INC.: Dioxins/Furans Toxic Equivalency Factor Calculation**

**Coal Mill #1**

Client: Ash Grove Cement  
 Test Dates: 10/22/02  
 Plant Location: Seattle, WA  
 Source: Coal Mill 1  
 Control Equip: Baghouse

Test Date:			Run 1		Run 2		Run 3		Average	
Test Time:			10/22/2002		10/22/2002		10/22/2002			
			9:14-12:22		13:42-16:52		17:53-21:04			
Baghouse Temperature	°F		220.4		220.0		220.5		220.3	
Coal Mill Temperature	°F		170.8		168.5		169.9		169.7	
Coal Mill Load	tons/hr		7		7		7		7	
Kiln Feed Load	tons/hr		161.6		165.8		168.7		165.4	
Clinker Load	tons/hr		96.6		99.1		100.9		98.9	
Toxic Equivalency Factor			pg/dscm		pg/dscm		pg/dscm		pg/dscm	
Compound			TEQ ng/dscm		TEQ ng/dscm		TEQ ng/dscm		TEQ ng/dscm	
2,3,7,8-TCDD	1	0	0.00E+00		0		0.00E+00		0	
1,2,3,7,8-PeCDD	0.5	0	0.00E+00		0		0.00E+00		0	
1,2,3,4,7,8-HxCDD	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,6,7,8-HxCDD	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,7,8,9-HxCDD	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,4,6,7,8-HpCDD	0.1	0	0.00E+00		0		0.00E+00		0	
OCDD (total)	0.001	5.50	5.50E-06		4.62		4.78E-06		4.97	
2,3,7,8-TCDF	0.1	0.50	5.00E-05		0		0.00E+00		0.17	
1,2,3,7,8-PeCDF	0.05	0	0.00E+00		0		0.00E+00		0	
2,3,4,7,8-PeCDF	0.5	0	0.00E+00		0		0.00E+00		0	
1,2,3,4,7,8-HxCDF	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,6,7,8-HxCDF	0.1	0	0.00E+00		0		0.00E+00		0	
2,3,4,6,7,8-HxCDF	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,7,8,9-HxCDF	0.1	0	0.00E+00		0		0.00E+00		0	
1,2,3,4,6,7,8-HpCDF	0.01	0	0.00E+00		0		0.00E+00		0	
1,2,3,4,7,8,9-HpCDF	0.01	0	0.00E+00		0		0.00E+00		0	
OCDF (total)	0.001	0	0.00E+00		0		0.00E+00		0	
Sample Volume	dscm		3.379		3.355		3.267		3.334	
Sample Volume	dscf		119.349		118.494		115.393		117.745	
Stack Gas Flow Rate	Q <sub>std</sub>	dscf/m	5,316		5,316		5,117		5,250	
Stack Gas Velocity	V <sub>s</sub>	feet/sec	73.59		73.75		71.51		72.95	
Stack Pressure	P <sub>s</sub>	inches Hg	30.02		29.87		29.87		29.92	
Stack Temperature	T <sub>s</sub>	°R	622.7		621.7		627.1		623.8	
Stack Oxygen	%O <sub>2</sub>	%	12.64		12.72		12.7		12.69	
Isokinetic Sample Rate	ISOK	%	102.5		101.8		102.9		102.4	
Toxic Equivalent Concentration (TEQ) of 17 PPDD/PCDF (ng/dscm)			0.00005550		0.000004620		0.000004780		0.00002197	
Toxic Equivalent Concentration (TEQ) of 17 PCDD/PCDF (ng/dscm TEQ@7%O <sub>2</sub> )			0.00009340		0.000007851		0.000008103		0.00003720	
Toxic Equivalent Concentration (TEQ) of 17 PCDD/PCDF per megagram of clinker			0.005719		0.0004641		0.0004539		0.002184	
TEQ Emission Rate (lbs/hr)			2.481E-14		2.051E-15		2.066E-15		9.642E-15	

Non-detected compounds were reported as zero

The Toxic Equivalency Factors utilized are from the 1989 International Standards

ng/megagram of clinker = (ng/dscm)\*(dscf/m)\*(60 min/hr)/((35.32 dscf/dscm)\*(clinker tons/hr)\*(0.9072 metric tons/short ton))

clinker tons/hour = (Kiln Feed tons/hr)\*(0.598% Efficiency)

lbs/hour = (ng/dscm)\*(Q<sub>std</sub> dscf/minute)\*(60 minutes/hour)\*(2.205E-12 lb/ng) / (35.32 dscf/dscm)

pg/dscm = picograms per dry standard cubic meter

ng = nanograms



Data Form 003-Q. Thermocouple Quarterly Performance Audit Report		
Procedure No.: SECMSP-003	Ash Grove Cement Company Seattle, Washington	Page: 1 of 1
Rev No.: 1		Rev. Date: 12/12/2002

Control Loop Name/Number:	
Transmitter Number:	413.BF1.T11

**Calibration Instruments:**

Description	ID#	Certified Expiration
FLUKE 725	66 4133-8000356	3/11/04
HART 275 Communicator	0005-1458A	NA

**Loop Test:**

	As Found	As Left
4mA Test Signal:	0°	0°
20mA Test Signal:	1000°	1000°

**Thermocouple (TC)/Digital Multimeter (DMM) Calibration:**

Calibration Date: 3-11-04

TC/DMM		ASTM Reference °F	Specification (≤ ±2°F)		
mV	°F		Difference (°F)	Yes	No
	69.9°	69.2°	.7°	✓	

**Temperature CMS Validation:**

Calibration Date:

Range	Calibrated TC/DMM Output		Central Control Room (CCR) Display Temperature (°F) ±5% F.S.				
°F	mV	°F	°F	TC - CCR	Expected	Yes	No
0-250		0°	.23°	0-.235.23	±12°F	✓	
250-500		250°	250.1°	.1°	±25°F	✓	
500-750		500°-750°	500/749.9°	500°/.1°-750°	±37°F	✓/✓	
750-1000		1000	999-1000	±1°	±50°F	✓	

**B. Corrective Action:** Any "No" response requires corrective action. Complete a Malfunction Report Form/Work Request and describe the corrective action taken below.

Malfunction Start Date & Time: NA Malfunction End Date & Time: NA

Was Malfunction Report Form/Work Request delivered to Maintenance Planner? Yes No NA

Describe corrective action: None @ this time

After corrective action, attach another DF 003-Q or DF 003-C to verify that corrective action was successful. Check attached: DF 003-Q DF 003-C NA ✓

Person Notified

Date and Time of Notification

**C. Comments:**

Checked By: R. Downs

Date: 7-28-03

Reviewed By: [Signature]  
tocalq

Date: 7/28/03

7/28/03